

GWQB-CNMP-CAFO Comparison Chart

AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
I.	FACILITY DESIGN AND CONSTRUCTION, AND OPERATIONAL MANAGEMENT		
A.	Manure Solids Management		
1.	Short term solids storage		
a.	Minimize generation and infiltration of leachate by diverting stormwater runoff and prevent ponding of water within areas used for stockpiling.	Manure and wastewater management system should include all the components and management activities necessary to minimize degradation of water quality (NM CNMP Tech. Guidance). Must contain runoff.	Storage may require an impervious layer, such as concrete or a liner. Adequate manure storage capacity based upon manure and waste production and land availability shall be provided. Must contain runoff.
2.	If land applying stored manure		
a.	Remove and/or land apply manure solids in a manner to prevent contamination of ground water.	Management of manure in an environmentally responsible manner from time of production through distribution (NM CNMP Tech. Guidance, Sept. 2001). Practice 590 standard is used. Nutrient Mgt is based on agronomic rates of N, P, & K. Manure shall not be applied to frozen, flooded or saturated soil.	Manure shall not be applied on frozen ground, during rainfall, or when soil is saturated.
b.			Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of nutrients in the manure, litter, or process wastewater.
3.	If hauling stored manure offsite		
a.	Maintain a log of the dates and volumes of manure being removed from the facility. May be required to submit a copy of logs to GWQB.	Records shall be kept for a period of five years or longer for dates and amounts of waste removed from the system due to feeding, energy production, or export from the operation (NM Waste Utilization (633) Standard and Jobsheet). Require Nutrient amounts/ton (N, P, &K), Name, address, phone number of who gets the manure.	Records relating to transfer of manure or process wastewater to other persons – see 40 CFR 122.42(e)(3)
b.			Prior to transferring manure, litter, or

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			process wastewater to other persons, Large CAFOs must provide most current nutrient analysis of manure, litter, or process wastewater
c.			Large CAFOs must retain for 5-years records of: 1. Date 2. Recipient name 3. Recipient address 4. Approximate amount of manure, litter or process wastewater transferred to another person
B.	Stormwater Management		
1.	General Management		
a.	Divert stormwater from corrals and other areas of the facility, which contains dairy wastes into an impoundment. <ul style="list-style-type: none"> Impoundment may be combined with wastewater. Impoundment may be separate from wastewater lagoon 	Stormwater runoff impoundment may be combined with wastewater or separate from wastewater lagoon. Unroofed confinement areas must have a system for collecting and confining contaminated runoff. Uncontaminated runoff can be diverted if a roof runoff management system and diversions are used. (Ag. Waste Mgt. Field Hdbk).	Divert stormwater from corrals and other areas of the facility which contain dairy wastes into an impoundment.
b.	If impoundment is separate from the wastewater lagoon, then design, operate and maintain the impoundment to contain run-off from a 25-yr, 24-hr rainfall event.	If impoundment is separate from the wastewater lagoon, then design, operate and maintain the impoundment to contain run-off from a 25-yr, 24-hr rainfall event.	If impoundment is separate from the wastewater lagoon, then design, operate and maintain the impoundment to contain run-off from a 25-yr, 24-hr rainfall event.
c.	If a combination lagoon, then maintain adequate freeboard in the lagoon at all times to contain run-off from a 25-yr, 24-hr rainfall event.	If a combination lagoon, then maintain adequate freeboard in the lagoon at all times to contain run-off from a 25-yr, 24-hr rainfall event.	If a combination lagoon, then maintain adequate freeboard in the lagoon at all times to contain run-off from a 25-yr, 24-hr rainfall event.
d.	If impoundment separate from wastewater lagoon, then pump stormwater from the impoundment to the wastewater lagoon or	No time limit specified. Non-polluted runoff should be excluded to the fullest extent possible, except where its storage is advantageous to the	No time limit specified.

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	designated land application area within 14 days of the rainfall event.	operation of the agricultural waste management system, such as for dilution (Waste Storage Facility (313) Standard).	
e.			Need staff gauge in lagoon and rain gauge, schedule of application, records of where manure goes, weekly records of ponds, maintain at least 1ft of freeboard
f.			Must keep records on site – weekly water level measurements, rainfall amounts, etc.
g.	Rainfall run-on diversion from facility is encouraged.	No run-on requirements. Follow state and federal requirements.	Rainfall run-on diversion from facility is encouraged. Ensure clean water is diverted, as appropriate, from production area.
2.	Stormwater Impoundment Liners		
a.		No specified requirements for stormwater impoundment liners. Follow state and federal requirements.	If the pond material will meet permeability (NRCS specs or 1.0×10^{-7} cm/s at 1.5 ft thick) requirements or document no hydrologic connection between GW and SW, then no liner required. All other situations require a liner.
C.	Wastewater Lagoon Operation, Construction, Lining and Maintenance		
1.	Liner Requirements		
a.	Required for all wastewater storage lagoons.	For wastewater storage ponds, require liners according to Appendix 10D (Agricultural Waste Management Field Handbook), state and federal requirements.	All process water lagoons shall be lined unless documentation is provided that no hydrologic connection to surface water exists. Documentation may include: 1) no significant leakage exists or 2) that leakage will not migrate to surface waters.
2.	Liner Specifications for All Wastewater Lagoon Liners		

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a.	Wastewater lagoons must be constructed in accordance with NMED Guidelines for clay or synthetic liners.	Liners shall meet or exceed the criteria in Appendix 10D (Agricultural Waste Management Field Handbook), state and federal requirements.	Liners constructed in accordance with NRCS Agricultural Waste Management Field Handbook, Appendix 10D, will be considered adequate. Where no site specific assessment has been done by an NRCS engineer or qualified groundwater scientist, liners shall be at least 1.5 feet thick with a hydraulic conductivity no greater than 1×10^{-7} cm/sec.
b.	Plans for lagoons must be approved by NMED prior to construction. A licensed professional engineer must certify designs and as-builts and oversee construction.	NRCS requires a licensed professional engineer certify designs.	Same as CNMP

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c.	All wastewater storage lagoons must be sized to store the maximum daily discharge volume for 60 days while maintaining two feet of freeboard at all times. Solids shall be removed from the lagoon as needed to maintain adequate capacity	For waste storage facilities, Minimum storage period is based on the timing required for environmentally safe waste utilization considering the climate, crops, soil, equipment, and local, state, and federal regulations. Required storage volume shall consist of the total of the following as appropriate: (a) manure, wastewater, and other wastes accumulated during the storage period, (b) normal precipitation less evaporation on the surface area (at the design storage volume level) of the facility during the storage period, (c) normal runoff from the facility's drainage area during the storage period, (d) 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility, (e) 25-year, 24-hour runoff from the facility's drainage area, (f) residual solids after liquids have been removed. A minimum of 6 inches shall be provided for tanks, (g) Additional storage as may be required to meet management goals or regulatory requirements (Waste Storage Facility (313) Standard).	Min storage is 21 days, plus free board and 25-yr stormwater. No hazardous chemical discharges to lagoons. Must have capacity to hold wastewater so no application during frozen or wet conditions. A permanent marker (measuring device) shall be maintained in the wastewater retention structure to show the 1) volume required for storage of runoff from a 25-year, 24-hour catastrophic or chronic rainfall event, and 2) the minimum treatment volume level in the retention structure. A record of the water level shall be maintained.
d.	Side slopes of lagoon not steeper than 3:1	The combined side slopes of the settled embankment shall be not less than 5 horizontal to 1 vertical, and neither slope shall be steeper than 2 horizontal to 1 vertical unless provisions are made to provide stability. Unless supported by a soil investigation, excavated side slopes shall be no steeper than 2 horizontal to 1 vertical. (Waste Storage Facility (313) Standard).	Existing ponds that are stable are OK. New are built to NRCS standards.

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e.	Must submit as-built plans of the lagoon and liner, capacity volume calculations, and field compaction and density testing.	Must submit as-built plans of the lagoon and liner, capacity volume calculations, and field compaction and density testing.	Must have available onsite as-built plans of the lagoon and liner, capacity volume calculations, and field compaction and density testing.
f.	Licensed professional engineer must certify as-builts.	Licensed professional engineer must certify as-builts.	Licensed professional engineer must certify as-builts.
g.	Must perform monthly visual inspection of lagoons and berms. Must keep water surface free of floating plants and debris and keep berms free of deep-rooted plants. If berms show signs of erosion, must submit a corrective action plan for protecting the berms, which may include the placement of riprap, shallow-rooted grasses or other methods for armoring the berms.	Periodic inspections of all equipment and runoff management devices. Check concrete surfaces for accelerated weathering, spalling, settlement, alignment, or cracks and immediately repair. Immediately remove any foreign debris in or adjacent to the waste storage pond. Settlement or cracks in the earthen sections should be investigated to cause and immediately repaired.	Periodic inspections of all equipment and runoff management devices, periodic visual facility inspections, and yearly complete site inspections. Damage to embankments. No trees and stabilized. Any damage to liner must be evaluated within 30days. Re-evaluate every 5 years. Records required for all inspections, maintenance, etc.
h.	NMED must be notified 5 days prior to beginning construction and prior to discharge to the lagoon.		
3.	Clay-Liners (native soil or added clay material; Partial guideline requirements)		
a.	Must submit clay (native soil) analyses for NMED approval prior to lagoon construction. See the following:	Liners shall meet or exceed Ag. Waste Management Field Handbook, Appendix 10D, and NMED Guidelines for Clay Liners.	All process water lagoons shall be lined unless documentation is provided that no hydrologic connection to surface water exists. Documentation may include: 1) no significant leakage exists or 2) that leakage will not migrate to surface waters.
b.	Saturated Hydraulic conductivity of clay must be at or below 1×10^{-7} at 90% Standard Proctor Density. ASTM D-422	If GW standard cannot be met without clay additions, then refer to NRCS Standard. Bentonite shall be a sodium bentonite with a free swell of at least 22 milliliters as measured by ASTM Standard Test Method D5890, unless laboratory tests using other bentonite types are used for design. (Pond Sealing or Lining - Bentonite Treatment (521C.))	Use current NRCS standard.

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c.	At least 50% soil must pass #200 Sieve	Liners shall meet or exceed Ag. Waste Management Field Handbook, Appendix 10D, and NMED Guidelines for Clay Liners.	
d.	Soil must have minimum plasticity index of 10%	Liners shall meet or exceed Ag. Waste Management Field Handbook, Appendix 10D, and NMED Guidelines for Clay Liners.	
e.	Maximum particle size of 4 millimeters	Liners shall meet or exceed Ag. Waste Management Field Handbook, Appendix 10D, and NMED Guidelines for Clay Liners.	
f.	Must perform field density testing of liner	Liners shall meet or exceed Ag. Waste Management Field Handbook, Appendix 10D, and NMED Guidelines for Clay Liners.	
g.	Minimum liner thickness is 12 inches (compacted) installed in two 6-inch compacted lifts.	For a bentonite liner, minimum thickness of the finished compacted liner shall be 6 inches. At least 6 inches of compacted soil cover shall be placed over the soil-bentonite liner (Pond Sealing or Lining - Bentonite Treatment (521C) Standard). See table by depth (521C). Minimum thickness of a compacted clay liner is 1 foot.	If on-site assessment of native materials shows conductivity greater than 1×10^{-7} , then a liner would be needed. Minimum thickness of 18 inches. Constructed of native soil, clay, or liner materials, as specified by NRCS.
h.	* See additional requirements in NMED Guidelines for Liner Material and Construction of Clay-Lined Lagoons. The liner material must meet all criteria set forth in the NMED Guidelines. If the material analyses submitted does not meet all of the required criteria, must either augment and re-analyze the material as required in the NMED Guidelines or install a synthetic liner. If NMED does not receive the clay analyses prior to lagoon construction, then may be required to re-line the lagoon.		
4.	Synthetic Liners (partial guideline requirements)		

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a.	Liner material must be at least 40 mils thick	Variable minimum thickness requirement, depending on material (Pond Sealing or Lining - Flexible Membrane (521A) Practice).	Same as NRCS. Synthetic liner must be, at a minimum, equivalent to 1×10^{-7} , 18 inches thick.
b.	Subgrade must be compacted to 90% SPD and be free of rock, vegetation and stubble.		
c.	Liner seams must be field tested		
d.	* See additional requirements in NMED Guidelines for Liner Material and Site Preparation for Synthetically Lined Lagoons. Must meet all criteria set forth in the NMED Guidelines.	Design of the synthetic liner for a waste impoundment shall meet or exceed NRCS National Engineering Handbook, Part 651, Agricultural Waste Management Field Handbook, Chapter 10, Appendix 10D, and state regulatory requirements.	
D.	Land Application		

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1.	Must apply wastewater and stormwater runoff to an irrigated and harvest crop.	Must apply manure and effluent to irrigated cropland following nutrient management standard procedures and nutrient budget (Nutrient Management (590) Practice).	<p>Same as NRCS plus: <u>Land Application Area - see 40 CFR 412.4</u> Application rates for manure, litter, and other process wastewater applied to land under the ownership or operational control of the CAFO must minimize N&P transport from the field to surface waters in compliance with the technical standards for nutrient management established by the Director. Such standards shall include following:</p> <ol style="list-style-type: none"> 1. Field specific assessment of potential for N&P transport from field to surface waters; address form/source/amount/timing/method of application of nutrients on each field to achieve realistic production goals while minimizing N&P movement to surface waters (see 412.4(c)(2)(i)) 2. Include flexibilities for any CAFO to implement nutrient management practices to comply with the technical standards, including consideration of multi-year P-application on fields that do not have high potential for P-runoff; phased implementation of P-based nutrient management; and other components as determined appropriate by the Director (see 412.4(c)(2)(ii))

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2.	Total nitrogen from application of effluent, manure solids and chemical fertilizer shall not exceed by more than 25% the amount reasonably expected to be taken up and removed by the harvested crops on an annual basis.	Recommended nutrient application rates shall be based on NMSU recommendations and/or industry practice when recognized by NMSU that consider current soil test results, realistic yield goals and management capabilities. When the Phosphorus Index is High or greater, manure shall be applied at rates consistent with the phosphorus standard (Nutrient Management (590) Standard).	Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of nutrients in the manure, litter, or process wastewater (Nutrient Management Plan - see 40 CFR 122.42(c)(1)).
3.	Nitrogen content of manure or effluent shall not be adjusted to account for volatilization, mineralization or denitrification processes.	Volatilization, mineralization, and denitrification loss processes are estimated with the NMSU Fertilizer Interpretation Software.	Same as NRCS.
4.	Must mix effluent with irrigation water and distribute evenly over the entire field, and prevent excessive ponding of water.	Erosion, runoff, and water management controls shall be installed on fields that receive nutrients. Irrigated fields must have an Irrigation Water Management Practice (449) Standard developed. Maintain irrigation application records.	Minimize ponding/puddling of wastewater, reduce nuisance conditions such as odors and flies, no impact to endangered species. Flood irrigation may not be able to comply with these requirements.
5.	Must distribute manure solids evenly over the entire field.		
6.	Must complete Land Application Data Sheets (LADS) to track nitrogen loading.	NRCS Records sheet must be filled out annually.	Records required for all nutrient applications. Records to be kept on-site for 5 yrs.
7.	The permittee shall implement a backflow prevention method to protect water supply wells used in the wastewater disposal system from backflow contamination.		
8.		In order to obtain a Resource Management System on cropland, Irrigation Water Management, Nutrient Management, Conservation Crop Rotation, and Pest Management must be included in the CNMP.	

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9.		Additional conservation practices may need to be installed based on soil, air, water, plant and animal resource concerns identified to be addressed by the CNMP. For example, Residue Management, Irrigation Land Leveling, Cover Crop.	
E.	Crop and Nutrient Management Plans		
1.	A crop and nutrient management plan must be submitted with the discharge permit application. The plan must demonstrate land application practices will not cause a vertical migration of nitrogen through the soil profile and threaten ground water quality.	Nutrient Management (590) Jobsheet and other Conservation Practice Standard Jobsheets are completed. All nutrients must be accounted for.	Plans not submitted for review but must be available onsite w/personnel onsite who are familiar with location and implementation of plans. No discharge to ground or surface waters.
2.	Nutrient management is typically driven by nitrogen and/or total dissolved solids (TDS).	Resource inventory worksheets and appropriate standard jobsheets as well as NMSU Fertilizer Interpretation Software are completed. As a minimum, the plan is reviewed and revised with each soil test cycle.	Nutrient management may be phosphorus driven.
3.			Nutrient Management Plan - see 40 CFR 122.42(e)(1)
a)	Refer to: Section A		Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities (per old R6 GP, may also include 1' freeboard and 21 days available storage).
b)			Ensure proper mgmt of mortalities (e.g., no disposal in structures or treatment systems not specifically designed to treat animal mortalities).
c)			Ensure clean water is diverted, as appropriate, from production area.
d)			Prevent direct contact of confined animals with

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			waters of U.S.
e)			Ensure chemicals and other contaminants handled on-site are disposed of properly (e.g., no disposal in structures or treatment systems not specifically designed to treat such chemicals and other contaminants).
f)			Identify site-specific conservation practices to be implemented to control runoff of pollutants to waters of U.S. (e.g., appropriate buffers or equivalent practices).
g)			Identify protocols for appropriate testing of manure, litter, process wastewater, and soil.
h)			Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of nutrients in the manure, litter, or process wastewater.
i)			Identify specific records that will be maintained to document the implementation and mgmt of the minimum elements described above. (122.42(e)(1)(i) through (e)(1)(viii))
F.	Other Operational Management Criteria		

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1.		<p>CNMP should include the following (see attached description):</p> <ol style="list-style-type: none"> 1. Facility Information 2. Safety and Emergency Action Plan 3. Objectives and Resource Concerns 4. Inventory, Analysis and Alternatives – conservation plan map, NM CNMP inventory sheet or equivalent 5. Plan Summary of Decisions 6. Operation and Maintenance – Reviews and plan modifications, operation and maintenance procedures 7. Recordkeeping 8. Permits 	
2.		Collection, storage, treatment and/or transfer practices will meet the minimum requirements in NRCS Conservation Practice Standards as appropriate: Waste Storage Facility (313), Waste Treatment Lagoon (359), Manure Transfer (634).	
3.		Comply with existing federal, tribal, state and local regulations, associated with: disposal of dead animals, animal medical wastes, and spoiled feed or other contaminants that may be regulated.	

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4.		Document the following: types of animals and phases of production; numbers of each animal type, average weight, period of confinement; total estimated manure and wastewater volumes produced; manure storage type, volume and length of storage; existing transfer equipment, system and procedures; operation and maintenance activities that address the collection, storage, treatment, and transfer of manure and wastewater; nutrient content and volume of manure; an emergency action plan.	
5.		Consider air quality in and around structures, waste storage areas, and treatment sites may be impaired by excessive dust, gaseous emissions, and odors. Consider proper siting and selected conservation practices to address air quality concerns.	
6.		Feed management activities must be considered in the CNMP.	
G.	Submittal Requirements for Facility Design and Construction, and Operational Management Information		
1.	GWQB requires all design, construction and management information be submitted and/or kept on-site.	Records to be kept on-site by producer.	CAFO Regulations <u>requires all facility design, construction and management information be kept on-site.</u>
**	Refer to the charts titled “Typical Facility Design and Construction Submittals to Agencies” and “On-Site Record Keeping”		
II.	MONITORING		
A.	Measuring Discharges		
1.	Meter Installation		
a.	Must install a meter on the line from milking parlor to lagoon to measure discharges to the lagoon	No meter requirements for planning other than those required by state or federal regulations.	

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b.	Must install a meter to measure discharge from the lagoon to each field in the land application area.	No meter requirements for planning other than those required by state or federal regulations.	No method specified - must be able to calculate exact application of nutrients.
c.	Prior to discharge, submit confirmation of meter(s) installation, type, calibration and locations.		
2. Determining Discharge Volumes			
a.	Must measure the <u>monthly</u> discharge volume from the parlor to the lagoon. Flow meter must be kept operational at all times.	None required other than to satisfy state and federal requirements.	
b.	Submit to NMED semi-annually, monthly meter readings and monthly discharge volumes discharged to the lagoon.		
c.	Must measure and record all discharges from the lagoon to each field in the land application area. Must keep a log showing the date and location of each discharge, meter readings immediately prior to and after each discharge, and the calculated total volume of each discharge.		No method specified - must be able to calculate exact application of nutrients.
d.	Submit to NMED semi-annually, a copy of the logs recording each discharge from the lagoon to each field in the land app area.		
B. Ground Water Quality Monitoring			
1. Monitoring Well Installation			
a.	Prior to discharging, must install all required monitoring wells. Typically one located upgradient of the facility, one located downgradient of the lagoons, and one located downgradient of the land application areas.	No water monitoring requirements other than those required by state or federal regulations.	No monitoring unless (unauthorized) discharge from lagoon(s) or land application area. If notified by the State/Tribe or Director (EPA) that the potential exists for the contamination of surface waters or drinking water, the permittee shall install a leak detection system or monitoring wells in accordance with that notice.

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b.	NMED must approve locations before installation.		
c.	Must complete wells according to NMED Monitoring Well Construction and Abandonment Guidelines.		
d.	Must submit construction and lithologic logs within 30 days of well completion.		
2.	Well Survey & Ground Water Flow Direction		
a.	All monitoring wells must be surveyed to a common permanent benchmark, and depth to water must be measured to determine ground water flow direction and gradient. Results must be submitted to NMED within 30 days of survey. If the survey indicates that the monitoring wells were not installed downgradient of the intended sites, well replacement or additional wells may be required	No requirement other than that required by state or federal regulations.	
3.	Determining Ground Water Quality		
a.	Depth to water must be measured in each well prior to each sampling event	No water monitoring requirements other than those required by state or federal regulations.	
b.	Monitoring wells must be sampled prior to discharging and quarterly thereafter. Ground water must be analyzed for nitrate-nitrogen (NO3-N), total Kjeldahl nitrogen (TKN), Chloride (Cl), and total dissolved solids (TDS).		
c.	Depth to water and analytical results are due to NMED on a quarterly basis.		
C.	Effluent Quality		

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2.	Results are submitted to NMED semi-annually.		Submitted to SWQB and USEPA.
D.	Documentation for Land Application		
1.	Reporting of Land Application		
a.	Must complete Land Application Data Sheets (LADS) to track nitrogen loading. LADS due semi-annually	Nutrient Management (590) Jobsheet is completed.	
b.	Must report on LADS the type of crop(s) grown and yields		
2.	Soil Sampling		
a.	Must sample soil prior to discharge and annually or semi-annually thereafter	Annual soil testing required (Nutrient Management (590) Standard).	Same as NRCS - records kept onsite and available.
b.	Sample at 0-12" and 24-36" depths	Sample at 0 -12" depth or appropriate depth for specific crop rotation. NMSU Extension Guide A-114.	
c.	At minimum, analyze for NO ₃ -N and TKN	At minimum, analyze for pH, EC, OM, NO ₃ -N, P, K, MG, Ca, Na.	
d.	Analyze NO ₃ -N by KCL extract		
e.	Must submit analytical results and a map showing the fields and sampling locations.		
3.	Harvested Plant Material Analyses		

¹ CAFO information based on requirements in the April 14, 2003 final rule and potential requirements of the pending Region 6 General Permit.

² GWQB requirements are site specific and may be more stringent than those listed in the chart.

GWQB-CNMP-CAFO Comparison Chart

AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
a.	Some facilities may be required to analyze harvested plant material from final harvest for %nitrogen to determine actual nitrogen removal	Plant tissue testing optional.	Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of nutrients in the manure, litter, or process wastewater.
b.	Submit all harvested plant material analyses with the fall monitoring report.		
4.	Chemical Fertilizer Application		
a.	Must keep a log of all chemical fertilizer applied to each field in land application area which receives wastewater or manure solids. The log shall include: the date of application, type and nutrient concentration of the fertilizer, and amount applied to each field.	Records kept include: soil test results and recommendations for nutrient application; quantities, analyses and sources of nutrients applied; dates and method of nutrient applications; crops planted, planting and harvest dates, yields, and crop residues removed; results of water, plant, and organic by-product analyses; and dates of review and person performing the review, and recommendations that resulted from the review (Nutrient Management (590) Standard).	Records kept onsite and available.
b.	Must submit a copy of the logs semi-annually.	Records should be maintained for five years, or period longer than five years if required by other Federal, state or local ordinances, or program or contract requirements. (Nutrient Management (590) Standard).	Records must be maintained for 5 years.
E.	Summary of Reporting to be submitted – see “Routine Monitoring Submittals to Agencies” chart		
1.	GWQB requires submittal of monitoring reports. See attached chart “Routine Monitoring Submittals”		Annual reporting required. See attached chart “Routine Monitoring Submittals”
F.	Summary of Records to be Kept On-site – see “On-Site Record Keeping” chart		
1.	GWQB requires on-site record keeping. See attached chart “On-Site Record Keeping”	CNMP requires on-site record keeping. See attached chart “On-Site Record Keeping”	CAFO requires on-site record keeping. See attached chart “On-Site Record Keeping”

¹ CAFO information based on requirements in the April 14, 2003 final rule and potential requirements of the pending Region 6 General Permit.

² GWQB requirements are site specific and may be more stringent than those listed in the chart.

GWQB-CNMP-CAFO Comparison Chart
AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
III.	CONTINGENCY		
A.	If Standards are Exceeded		
1.	Collect another sample from the monitoring well(s) w/in 15 days to verify the initial sample results.	Contingency plan as required by state and federal regulations.	No discharge of pollutants to water of the U.S. (including via a hydrologic connection). Can discharge during a chronic/catastrophic event if permitted. Facility is presumed not to be "properly designed, constructed, operated, or maintained if a discharge occurs except during a chronic/catastrophic event.
2.	Within 30 days of confirmed ground water contamination, submit a corrective action plan to NMED. The corrective action plan shall include a site investigation to define the source, nature and extent of contamination and a proposed abatement option. Site investigation and abatement option shall be consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, 20.6.2.4106, 20.6.2.4107, and 20.6.2.4112 NMAC.		
3.	Provide for appropriate source control measures, such as re-lining the lagoon or changing land application practices in the corrective action plan.		
B.	Operational Failures		
1.	If a pipeline break, pump failure or other system failure occurs, wastewater shall be contained, pumped and/or transferred to the concrete sump, lagoon and/or land application area as necessary. Repair or replace failed components and no later than 48 hours from the time of failure.		
C.	Reporting Spills		

¹ CAFO information based on requirements in the April 14, 2003 final rule and potential requirements of the pending Region 6 General Permit.

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GWQB-CNMP-CAFO Comparison Chart

AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
1.	Verbally notify NMED w/in 24 hours of the incident and provide the information outlined in Section 20.6.2.1203.A(1) NMAC.	Spill reporting according to NMED procedures and CNMP safety and emergency action plan.	Verbal notification to SWQB and USEPA, Region 6 within 24 hours.
2.	Submit a written report w/in 7 days of discovering the incident verifying the oral notification and providing any additional information or changes.		Written notification to SWQB and USEPA, Region 6 within 5 working days of the discharge.
3.	Submit a corrective action report w/in 15 days of the incident.		
D.	If Excessive Nitrogen Loading Found in Land Application Area		
1.	If NMED determines, based on analytical results from surface and subsurface soil sampling, that nitrogen may be migrating through the vadose zone, the permittee shall, w/in 30 days of notification, submit a corrective action plan to reduce nitrogen concentrations in the soil. Include appropriate source control measures, such as reducing the amount of wastewater or solids applied to the land, installing a synthetically-lined total evaporative lagoon system, expansion of the land application area, and/or change the crop rotation to improve nitrogen removal. Deep soil and harvested material sampling:	Review sampling results, nutrient management budget and plan and revise accordingly with appropriate conservation/management practices.	

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GWQB-CNMP-CAFO Comparison Chart

AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
a.	Collect and analyze deep soil samples from the land application area. From each field of uniform management practices and soil characteristics, collect soil samples at depths of 2, 4, 6, 8 and 10 feet from three separate soil cores. Assemble composite samples for each depth from the three cores and analyze for NO ₃ -N and TKN. Analyze soil NO ₃ -N by a 2 molar KCl extract. Submit analytical results and a map showing the fields and sampling locations.		
b.	If initial deep soil sampling results indicate the presence of excessive nitrogen at depths below 36 inches, then continue deep soil sampling annually to verify success of the corrective actions. Submit analytical reports annually.		
c.	Determine the total nitrogen level of the harvested and removed plant material to verify nitrogen removal rates of each crop grown. A composite sample of fifteen sub-samples of plant material shall be taken from each field during the final harvest of each crop grown per year. Samples shall be analyzed for percent total nitrogen & percent dry matter. Submit reports annually.		
IV.	CLOSURE		
1.	Remove all manure from the corrals and apply to land application areas or transfer offsite.	Closure of Waste Impoundments (360) Standard	
2.	Empty lagoon(s) of wastewater and solids and perforate or remove the liner(s). Backfill lagoon(s) to blend with surface topography and prevent ponding.		
3.	Monitor all monitoring wells for two years following closure.		

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GWQB-CNMP-CAFO Comparison Chart
AGENCY REQUIREMENTS

	NMED - GWQB Permit	NM NRCS - CNMP	USEPA/Region 6 CAFO
a.	If sampling shows ground water standards are exceeded, then implement the contingency plan as described above		
b.	If ground water quality remains below standards during post-closure monitoring, plug the monitoring wells according to NMED Monitoring Well Construction and Abandonment Guidelines.		

¹ CAFO information based on requirements in the April 14, 2003 final rule and potential requirements of the pending Region 6 General Permit.

² GWQB requirements are site specific and may be more stringent than those listed in the chart.